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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,010	03/19/2004	Charles L. Butland	NAN 2-007	7794
<div>266 7590 11/01/2007</div> <div>MUELLER AND SMITH, LPA</div> <div>MUELLER-SMITH BUILDING</div> <div>7700 RIVERS EDGE DRIVE</div> <div>COLUMBUS, OH 43235</div>				
			<div>EXAMINER</div> <div>SMITH, FRANCIS P</div>	
			<div>ART UNIT</div> <div>4151</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE</div> <div>11/01/2007</div>	<div>DELIVERY MODE</div> <div>PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/805,010

Applicant(s)

BUTLAND, CHARLES L.

Examiner

Francis P. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 3 and 8 are objected to because of the following informalities: "formed form" apparently should be changed to "formed from". Appropriate correction is required.
2. Claim 6 is objected to because of the following informalities: "additional" apparently should be changed to "additionally." Appropriate correction is required.
3. Claim 7 is objected to because of improper dependency as being dependent on claim 7. For examination purposes, claim 7 is considered to be dependent on claim 6. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 3, 4, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "said biologic marker" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "said IR Taggant" in line 22. There is insufficient antecedent basis for this limitation in the claim.

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Claim 9 recites the limitation "said IR agent" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Butland (US 2002/0167161).

For claims 5-7, Butland '161 teaches:

a method of labeling the surface of and object for its identification which includes the use of "pit and fall" or "pit and land" technology to encode durable surface objects with a coded message ([0008] lines 9-12). The pits and falls encoded information may be protected by a coating that contains a biological marker, which may be labeled with an agent that emits selected wavelengths of energy when exposed to infrared radiation (analogous to biological and optical taggants)([009] lines 8-18).

For claim 8:

DNA (RNA, antibodies, antigens, and the like biologics) can be used to encrypt and transport information in situ such that the four organic bases of DNA can be used as a quaternary code ([0026] lines 1-3; [0031] lines 1-4).

For claim 9:

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The agent (e.g. IR agent) can be an up-converting phosphor, a lanthanide ion, or other chemical that emits selected detectable wavelengths of energy when exposed to infrared radiation ([0009] lines 14-18).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tel (US 6,565,002) in view of Butland et al. (US 6,030,657).

Tel teaches of a method for identifying one or more objects by associating a two-dimensional, optically readable pattern and an identification code being paired in a one-to-one correspondence by means of a predetermined algorithm (col.1, lines 6-11).

The said two-dimensional representation is then provided on the object to be identified

(col. 2, lines 31-34) (i.e. creating on said object an algorithmic mark). However, Tel does not disclose the use of additional taggants in combination with the two-dimensional algorithmic marks.

Butland et al. '657 discloses a method for labeling an object for its identification by using a biological marker labeled with an agent that emits selected detectable wavelengths of energy when exposed to infrared radiation (IR) (col. 2, lines 16-22). The biologic marker could be a DNA fragment (col. 2, lines 41-43), which is analogous to a biological marker/taggant formed from DNA bases. Furthermore, the agent can be an up-converting phosphor, a lanthanide ion, or other chemical that emits selected detectable wavelengths of energy when exposed to infrared radiation (i.e. an optical taggant) (col. 2, lines 25-29).

For countering product diversion, it is common practice to combine visible and invisible (to the naked eye) marks to prevent counterfeiting, according to Butland (US 5,599,578). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine common identification techniques such as the visible two-dimensional analog mark with the invisible biological and/or optical taggants to create a more complex identification method.

11. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tel (US 6,565,002) in view of Butland et al. (US 6,030,657) and further in view of Butland (US 2002/0167161).

Tel teaches of a method for identifying one or more objects by associating a two-dimensional, optically readable pattern and an identification code being paired in a one-

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to-one correspondence by means of a predetermined algorithm (col.1, lines 6-11). The said two-dimensional representation is then provided on the object to be identified (col. 2, lines 31-34) (i.e. creating on said object an algorithmic mark). However, Tel does not disclose the use of additional taggants in conjunction with the two-dimensional algorithmic mark or pit and land technology.

Butland et al. '657 discloses a method for labeling an object for its identification by using a biological marker labeled with an agent that emits selected detectable wavelengths of energy when exposed to infrared radiation (IR) (col. 2, lines 16-22). Furthermore, the agent can be an up-converting phosphor, a lanthanide ion, or other chemical that emits selected detectable wavelengths of energy when exposed to infrared radiation (col. 2, lines 25-29) (e.g. overcoating algorithmic mark with a biologic/optical taggant). As stated above, it is common practice to combine visible and invisible (to the naked eye) marks to prevent counterfeiting, according to Butland (US 5,599,578). However, Tel and Butland et al. '657 do not disclose the use of the "pit and land" technology in their anti-diversion sequence.

Butland '161 teaches of a method of labeling an object that uses "pit and land" technology to encode durable surface objects with coded message, which includes information for authentication/identification purposes ([0008] lines 9-12, and 31-33). Furthermore, Butland '161 discloses the use of a protecting overcoat that can also be part of the security system, e.g. a biological marker labeled with an agent (up-converting phosphor, lanthanide ion, or other chemical combinations of IR and UV agents) that

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emits selected detectable wavelengths of energy when exposed to infrared radiation ([0009] lines 6-18).

For anti-diversion purposes, it would be conceivable to combine two or more visible/invisible marks with optical taggants to create a more complex multi-modal authentication method. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the teachings of Tel, Butland et al. '657, and Butland '161 by incorporating an optically tagged, two-dimensional algorithmic mark with the "pit and land"/biological taggant sequence. Since it is known in the art to conjoin visible/invisible anti-diversion technology for verification purposes (Butland '578), the said tagged marks could easily be combined and marked on an object for product identification, including locations rarely accessed in the ordinary course of utility.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis P. Smith whose telephone number is (571) 270-3717. The examiner can normally be reached on Monday through Friday 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mikhail Kornakov can be reached on (571) 272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

F.P.S.

MICHAEL KOPNAKOV
PRIMARY EXAMINER

M. Kopnakov
10/22/07